

MASIMO.186A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James Price Coffin IV
Appl. No. : 09/422,208
Filed : October 19, 1999
For : SYSTEM FOR DETECTING
INJECTION MOLDING
MATERIAL
Examiner : S. Lee

Group Art Unit 2878

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and addressed to: Board of Patent Appeals and Interferences, United States Patent and Trademark Office, P.O. Box 2327 Washington, D.C. 20231, on

December 18, 2002

(Date)

John M. Grover, Reg. No. 42,648

#31 Appeal
Patel
T. 4/11/03
2.4-03

ON APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL BRIEF

BOARD OF PATENT APPEALS AND INTERFERENCES
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. Box 2327
WASHINGTON, D.C. 20231
ATTENTION: BOX 8

Dear Sir:

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BOARD OF PATENT APPEALS
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The Applicant is appealing the rejection of Claims 8-24, which were rejected in the final Office Action dated May 22, 2002 in the above-captioned patent application.

This Appeal Brief is filed in triplicate including Appendix A, which is a copy of the claims involved in this Appeal, Appendix B, which is a copy of the references cited in this Appeal, and Appendix C, which is a copy of the Federal Circuit cases cited in this Appeal. Moreover, an oral hearing is hereby requested. A check in the amount of \$600 is included to cover the fee of \$320 for filing an Appeal Brief pursuant to 37 C.F.R. § 1.17(c) and the fee of \$280 for an oral hearing before the Board pursuant to 37 C.F.R. § 1.17(d). According to the rules of 37 C.F.R. § 1.192, the Appellant's Brief is as follows.

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(1) REAL PARTY IN INTEREST

The real party in interest is Masimo Corporation, Inc.

(2) RELATED APPEALS AND INTERFERENCES

The Assignee/Appellant and the Appellant's legal representative know of no other appeals or interferences which will directly affect or be directly affected by, or have a bearing on the Board's decision in this Appeal.

(3) STATUS OF THE CLAIMS

The application was originally filed on October 19, 1999 with Claims 1-7. The Applicant canceled Claims 1-6, amended Claim 7, and added Claims 8-24. Claims 7-24 were finally rejected on May 22, 2002. An after-final Amendment, filed on August 22, 2002, cancelled Claim 7. In an Advisory Action dated September 9, 2002, the Examiner indicated that for purposes of Appeal, the August 22, 2002 after-final Amendment would be entered. Accordingly, Claims 8-24 are the subject of this Appeal.

In accordance with 37 C.F.R. § 1.192(c)(9), a copy of the claims involved in this Appeal, and their respective status, is contained in Appendix A attached hereto.

(4) STATUS OF THE AMENDMENTS

As disclosed in paragraph (3) above, an Advisory Action of September 9, 2002 indicated that for purposes of this Appeal, an August 22, 2002 after-final Amendment by the Applicant would be entered. The August 22, 2002 after-final Amendment cancelled Claim 7, included arguments supporting allowability, and did not amend Claims 8-24. Accordingly, none of the pending Claims 8-24 have been amended since the final Office Action of May 22, 2002.

(5) SUMMARY OF THE INVENTION

As discussed in the Applicant's specification, one drawback of conventional optical inspection devices for injection molding machines is that the devices often malfunction when the stock materials used in injection molding processes are colored similar to the

coloring of the cavity of the mold or are relatively transparent. The malfunction arises when, for example, the inspection device cannot detect flaws in the workpiece, cannot detect harmful stock materials leftover in the mold, or the like. See Applicant's Specification, Page 1, Lines 20-25.

The present invention relates to the addition of a fluorescent colorant to the stock materials. When fluorescent colorant is added to the stock materials injected into a

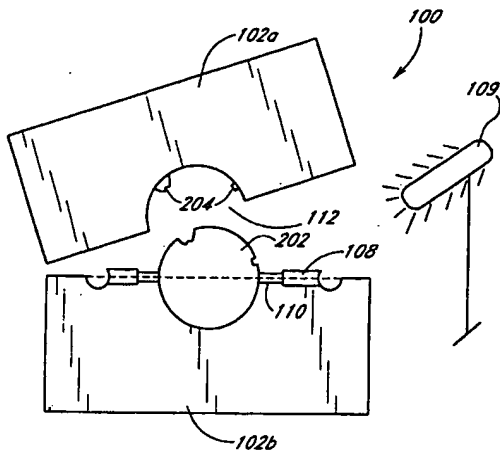


FIG. 2

mold 100, the likelihood that the color of the resulting product or workpiece 202 will lead to a malfunction is greatly reduced because one can energize the fluorescent colorant in the workpiece with ultraviolet light 109 and cause the workpiece, and any leftover materials 204 to fluoresce. The fluorescence advantageously allows inspection devices to, for example, detect flaws in the workpiece 202 or differentiate between the cavity 112 of the mold 100 and any remaining harmful leftover

stock material 204. In one disclosed embodiment, the fluorescent coloring is transparent in ambient light, and therefore, the coloring advantageously does not change the original color of the workpiece 202 in ambient light.

(6) ISSUES PRESENTED ON APPEAL

Whether Claims 8-24 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,656,210 to Hill et al. ("the Hill patent") in view of U.S. Patent No. 4,632,773 to Neefe ("the Neefe patent") and U.S. Patent No. 4,236,181 to Shibata et al. ("the Shibata patent").

(7) GROUPING OF CLAIMS

In the Final Office Action, the Examiner identified 35 U.S.C. § 103(a) as the sole basis for rejecting Claims 8-24. For the purpose of this appeal, Claims 8-13 and 15-20 can be grouped together, and Claim 8 can be treated as a representative claim. Moreover,

Claims 14 and 21-24 can be grouped together, and Claim 21 can be treated as a representative claim. Thus, Claims 8-13 and 15-20 will stand or fall together, and Claims 14 and 21-24 will stand or fall together.

(8) ARGUMENTS

The Applicant asserts that even though Claims 8-24 were subject to the same rejection, as recited above, all the claims do not stand or fall together and the separately grouped claims are separately patentable. For example, the differently grouped claims are separately patentable because the first group of claims are directed to a mold inspection device employing fluorescent coloring to improve the detection of unwanted leftover material, while the second group of claims are directed to a workpiece inspection device employing fluorescent coloring to improve the detection of flaws within the workpiece. While both inspection devices suffer from similar drawbacks relating to color as disclosed in the foregoing, the Applicant submits that prior art relevant to a mold inspecting device will not also necessarily be relevant to a workpiece defect detection device.

The final Office Action rejected Claims 8-24 under 35 U.S.C. § 103(a) as being unpatentable over the Hill patent in view of the Neeffe patent and the Shibata patent. To maintain an obviousness rejection under § 103(a), three requirements must be met:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure. See M.P.E.P. § 2143.

The Applicant respectfully submits that in the present case, (i) the combination of the Hill and Neeffe patents with the Shibata patent is improper because without knowledge of the presently claimed invention, neither the references nor knowledge available to an artisan supply a motivation to make the combination, and (2) even if there were a suggestion or motivation for the combination, the combination as a whole fails to teach or suggest

energizing a colorant in a workpiece to facilitate detection of flaws or unwanted leftover materials.

(i) The Combination of the Hill and Neefe Patents with the Shibata Patent is Improper Because Without Knowledge of the Presently Claimed Invention, Neither the References Nor Knowledge Available to an Artisan Supply a Motivation to Make the Combination

Recently, the Federal Circuit addressed the concern of using hindsight, e.g., the Applicant's own disclosure, in obviousness-type rejections. In *In re Dembiczak*, the Federal Circuit warned against using the inventor's disclosure as a blueprint without evidence of a suggestion, teaching or motivation in the prior art. 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999) (abrogated on other grounds by *In re Gartside*, 203 F.3d 1305, 53 U.S.P.Q.2d 1769 (Fed. Cir. 2000)). Shortly after *Dembiczak*, the Court in *In re Kotzab*, explained that "particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for the combination in the manner claimed." 217 F.3d 1365, 1371, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000) (emphasis added). Failure to have such particular findings led the Court to overturn an Examiner's and a Board's findings of obviousness. More recently, the Court in *In re Lee*, vacated a ruling by the Board of Patent Appeals and Interferences, stating that it was improper, in determining whether a person of ordinary skill would have been led to a particular combination of references, simply to use that which the inventor taught against its teacher. 277 F.3d 1338, 1344, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002).

As in *Dembiczak*, *Kotzab*, and *Lee*, the Examiner in the present application fails to provide an acceptable motivation to combine the Hill and Neefe patents with the Shibata patent. For example, several references relied upon by the Examiner during the prosecution of this application, including the Hill and Neefe patents, disclose molding devices for producing contact lenses. The Hill patent refers to the Neefe patent explaining that Neefe teaches incorporation of a fluorescent colored pigment into lens material used in a mold for contact lenses. The fluorescent pigment can later be used to identify

characteristics about the lenses, or to differentiate from, for example, counterfeit lenses. This process is often referred to as "tagging." As the Examiner recognized, the Hill patent fails to teach or suggest use of any mold inspection device for inspecting the released mold or inspecting defects in the workpiece. For example, the Hill patent discloses:

External mold release agents, especially water-soluble . . . agents . . . may be utilized . . . to facilitate demolding. Alternatively, the inner surface of the mold may be lined with . . . film . . . [which] is easily removed from the mold surface following injection . . . To help facilitate the release even further, the mold . . . [can be] slightly heated . . . Another demolding process utilizes water . . . See Hill, Col. 13:62 - Col. 14:7.

Thus, while the Hill and Neefe patents explicitly provide a number of mechanisms for flushing a mold, they completely fail to teach or suggest any inspection thereof. Moreover, and perhaps more importantly, the Hill and Neefe patents completely fail to teach or suggest any employment of the fluorescent tagging materials for anything related to clearing the mold or detecting defects in the lenses.

Completely unrelated to tagging, the Shibata patent discloses a defect detecting device where the brightness of a product from an mold under ambient light is measured by photodetectors and is compared to a standard, such as either the luminance of the surface of the cavity of the mold or the product. See Shibata, Column 6:18-25. Thus, the Shibata patent simply discloses a conventional inspection device which requires the luminance of the article under ambient normal conditions to make defect determinations.

Thus, the Applicant submits that an artisan having the Hill and Neefe tagging colorant and also having no knowledge of the claimed invention, would not be motivated to add an inspection device for detecting defects in the workpiece or detecting harmful leftover materials in the mold. In fact, the Shibata patent teaches away from the foregoing combination by disclosing that when the prior art malfunctions disclosed by Applicant occur, e.g., when the Shibata inspection device cannot distinguish between the mold and the workpiece, the Shibata patent discloses recoloring the molding to increase the distinction between the mold and the plastic. See Shibata, Column 4:18-25.

Thus, the Applicant submits that the combination of the Hill and Neefe patents with the Shibata patent is improper because without knowledge of the presently claimed invention, neither the references nor knowledge available to an artisan supply a motivation

to make the combination. Therefore, the Applicant respectfully submits that the final Office Action fails to establish a *prima facie* case of obviousness against the claims, and the Applicant respectfully requests allowance of Claims 8-24.

(ii) The Combination of the Hill, Neeffe and Shibata Patents Fail to Teach or Suggest Energizing a Colorant in a Workpiece to Facilitate Detection of Flaws or Unwanted Leftover Molding Materials

Even if the Board or a Court found an artisan would be motivated to combine the Hill and Neeffe tagging disclosure with the Shibata optical inspection device, which it should not, the combination still fails to create a *prima facie* case of obviousness against the claims because the combination fails to teach or suggest all the claim limitations. For example, each of the pending independent claims recites a light source used to cause emissions from the fluorescent colorant in the workpiece. As discussed above, the Hill and Neeffe patents, along with other references relied upon by the Examiner in previous Office Actions, disclose use of fluorescent materials for tagging, and fail to disclose or suggest use of the fluorescent coloring in any type of mold or workplace inspection.

The Shibata patent discloses a plastic injection mold watching device which uses a television camera, a television, and photo sensors placed on the television screen, to detect whether there is incomplete separation of the workpiece from the mold through either the brightness of the surface of the mold or the luminance of the workpiece. The Shibata photo sensors must rely on the color of the workpiece during ambient light for detection, and the Shibata patent fails to teach or suggest use of an energized color of the workpiece based on an exterior-generated energy source, such as, for example, an ultraviolet light source. Thus, the Applicant submits the Shibata patent fails to teach or suggest use of any light source for detection of defects or detection of unwanted leftover materials, let alone a light source for causing the fluorescent colorant in a workpiece to energize and emit light.

Thus, the combination of the Hill and Neeffe patents with the Shibata patent, which is improper, still fails to teach or suggest all limitations of Claims 8-24. Accordingly, the

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combination fails to establish a *prima facie* case of obviousness against the pending independent claims, and the Applicant respectfully requests allowance of the same.

The Applicant therefore submits that the pending claims, Claims 8-24, are patentably distinguished over the cited references.

(9) CONCLUSION

Because the combination of the Hill and Neeffe patents with the Shibata patent is improper, and because the combination as a whole fails to teach or suggest elements of the claims, Claims 8-24 are not properly rejected under 35 U.S.C. § 103(a). Accordingly, the Applicant respectfully requests withdrawal of the rejections of Claims 8-24, and allowance of the same.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: December 18, 2002

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APPENDIX A

This Appendix A contains a copy of the claims involved in this Appeal according to 37 C.F.R. § 1.192(c)(9).

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Pending) A method of determining whether an injection mold is substantially free from any leftover molding material, the method comprising:
 - injecting molding material including a fluorescent colorant into a mold to create a workpiece;
 - releasing the mold;
 - directing ultraviolet light into at least a portion of the mold with sufficient energy to cause emissions from the fluorescent colorant of any remaining molding material to be detectable; and
 - when remaining molding material is detected, removing the remaining molding material.
9. (Pending) The method of Claim 8, wherein the fluorescent colorant is substantially transparent in ambient light.
10. (Pending) The method of Claim 8, wherein the molding material is substantially transparent in ambient light.

11. (Pending) The method of Claim 8, wherein the fluorescent colorant and the molding material are substantially transparent in ambient light.

12. (Pending) The method of Claim 8, wherein the remaining molding material comprises the workpiece.

13. (Pending) The method of Claim 8, wherein the remaining molding material comprises small portions of the workpiece.

14. (Pending) The method of Claim 8, further comprising:
directing the ultraviolet light on the workpiece; and
inspecting the workpiece based on a reaction of the workpiece to the ultraviolet light.

15. (Pending) An optical inspection system for determining whether an injection mold is suitable for reinjection of molding materials, the optical inspection system comprising:

a reusable mold which accepts flowable materials comprising a fluorescent colorant, wherein the flowable materials cool to form a workpiece in the shape of the mold; and

a light source which directs ultraviolet light toward the reusable mold with sufficient energy to energize the fluorescent colorant of any leftover flowable materials within the reusable mold.

16. (Pending) The optical inspection system of Claim 15, wherein the fluorescent colorant is substantially transparent in ambient light.

17. (Pending) The optical inspection system of Claim 15, wherein the flowable materials are substantially transparent in ambient light.

18. (Pending) The optical inspection system of Claim 15, wherein the flowable materials and the fluorescent colorant are substantially transparent in ambient light.

19. (Pending) The optical inspection system of Claim 15, wherein the leftover flowable materials comprise the workpiece.

20. (Pending) The optical inspection system of Claim 15, wherein the leftover flowable materials comprise small portions of the workpiece.

21. (Pending) An optical inspection system for determining whether flaws or other abnormalities occurred in a workpiece made from an injection molding process, the optical inspection system comprising:

a light source which directs a first light toward a workpiece made from materials including a fluorescent colorant, wherein the first light comprises light of a wavelength not visible to humans with sufficient energy to cause the fluorescent colorant to emit a second light;

an inspection device which inspects the workpiece by detecting the second light, wherein the second light comprises light of a wavelength visible to humans.

22. (Pending) The optical inspection system of Claim 21, wherein the fluorescent colorant is substantially transparent in ambient light.

23. (Pending) The optical inspection system of Claim 21, wherein the materials are substantially transparent in ambient light.

24. (Pending) The optical inspection system of Claim 21, wherein the materials and the fluorescent colorant are substantially transparent in ambient light.

APPENDIX B

This Appendix B contains a copy of each of the references discussed in this Appeal.

1. U.S. Patent No. 5,656,210 to Hill et al., issued on August 12, 1997, for *Reaction Injection Molding as a Process to Prepare Contact Lenses*.
2. U.S. Patent No. 4,632,773 to Neefe, issued on December 30, 1986, for *Method of Making a Contact Lens Material Which May be Identified*.
3. U.S. Patent No. 4,236,181 to Shibata et al., issued on November 25, 1980, for *Defect Detecting Device*.

APPENDIX C

This Appendix C contains a copy of each of the Federal Circuit cases discussed in this Appeal.

1. *In re Dembiczak*, 175 F.3d 994, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999).
2. *In re Kotzab*, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000).
3. *In re Gartside*, 203 F.3d 1305, 53 U.S.P.Q.2d 1769 (Fed. Cir. 2000).
4. *In re Lee*, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).